

In The Specification

Please amend the disclosure as follows:

On page 3, paragraph beginning on line 3 --

Rotary kilns are large steel tubes typically over 50 meters in length and up to 7 meters in diameter. They are slightly inclined to the horizontal and are slowly rotated at about 1 to 4 revolutions per minute. Raw mix is fed into the kiln at the back (the upper end of the kiln), and gravity and the rotation of the kiln allows the mix to flow down the kiln at a uniform rate through the burning zone. Clinker is formed in the burning zone and flows out of the front of the kiln (the lower end of the kiln) where it is cooled by blowing air through the clinker bed, and the heated air is used for combustion. The primary fuel is introduced and burnt at the front of the kiln. The flame is drawn up the kiln to the burning zone where the heat intensity is highest and fusion of chemicals in the raw mix takes place. Hot combustion gases continue to flow up the kiln and exit from the back end. Opportunities for recovering heat from kiln exhaust gases have made incremental improvements in lowering the energy demand of the kiln.

On page 12, paragraph beginning on line 17--

Preheated raw kiln meal or material at 30 is fed into preheater 12 for pre-heating and drying. The material is collected from the hot gas flow in bottom stage cyclone 14, and is fed at 32 into the rotating kiln by way of a feed shelf ~~26~~ 18 enclosed in a smoke chamber 24. In the calcination process, hot gases rise through the calciner loop duct D and return to bottom stage cyclone 14. From cyclone 14, the hot gases flow through preheater duct sections ~~23a~~ 22b and ~~23b~~ 22c to cyclones 16, 20 and ~~26~~ 18 where the gases exit at 34.

As the hot combustion gases swirl through the preheater cyclones the raw material is entrained by the gases and heated. The raw kiln material is collected from the preheating gas flow and exits through the bottom material outlets of the cyclones at 14a, 16a, 18a, and 20a to various parts of the system. Heated raw meal from cyclones 18 and 20 is fed into preheater duct section ~~23a~~ 22b where the hot gases entrain most of the meal and carry the meal upward through intermediate stage cyclone 16 and upper stage cyclones 18, 20 where the material is collected and exits at 18a, 20a back into the preheater duct ~~23a~~ 22b. In this manner, the kiln feed meal and material is continuously preheated in the various preheater stages. In the process, a large portion of the kiln feed material is collected in lower stage cyclone 14 where it slides into the rotary kiln via feed shelf ~~26~~ 18.

Page 15, paragraph beginning at line 7 --

The burner 68 is fueled by a quick reacting control fuel 67, such as conventional coal, oil, gas, liquid waste derived fuel, or mixtures thereof. Burner 68 may be any suitable industrial/commercial burner. The temperature of the burner flame is controlled by the mixture or ratio of the control fuel. The flame initiates combustion of SWDF material at a controlled temperature in a high oxygen environment to produce a generally complete burnout of the wastes. For this purpose, a fuel mixture control 69 is connected in a loop with a thermocouple "T" located at the hot gas exit of ~~to~~ the bottom cyclone 14 to regulate the control fuel mixture. In this manner, control fuel 67 is controlled to maintain a desired temperature at thermocouple T, typically 880°C, which generally corresponds to 95% calcination. In the combustion chamber achieving a complete burnout of the SWDF material is desired, as well as a high level of calcination of the raw kiln material. For this

purpose, raw kiln material 70 or 66 is gravity fed into the combustion chamber from intermediate cyclone 16 through an inlet pipe 70a. A similar feed may be provided on the opposite side of the burner. Tertiary air 72 from the clinker cooler, having an oxygen content generally that of ambient, enters the combustion chamber on opposing sides through air inlets 74 and 76. The SWDF material is burned in the combustion chamber, along with the raw meal and other combustibles, in the presence of a high or ambient oxygen atmosphere due to the tertiary air. Any non-combustible products or ashes mix with the kiln material in the combustion chamber and flow into the calciner duct to continue any needed further calcinations and become part of the clinker, and eventually cement.

Page 17, paragraph beginning at line 8 --

In operation of the feed system, the auger speed is initially set to feed a desired constant rate of SWDF material in tons per hour. This is done by manually setting the auger motor control 48. The amount of raw kiln meal delivered to the calciner combustion chamber is determined, preferably between 85 to 100 percent, and diverter gate 63 is set to divert the remaining meal directly to in-line calciner duct 22. Preferably, the SWDF material provides about 18 to 20 percent of the fuel needed for calcination. With these two parameters set, quick reacting control fuel 67 is fed to burner 68, and is continuously regulated by the thermocouple loop to maintain a temperature of about 880 C at the beginning of gas exit duct ~~23a~~ 22b of the preheater connected to bottom cyclone 14. Heat from the SWDF material and flame causes calcination of most of the raw kiln material in the calciner combustion chamber with a generally complete burnout of the combustible materials. Any remaining calcination and burnout is achieved in the calciner duct loop

where heat from the kiln gases are added. Complete burnout means the burnout required to meet the regulatory levels of carbon monoxide, total hydrocarbons, and volatile organic compounds.

Page 19, paragraph beginning at line 4 --

As illustrated in Figure 5, loose shredded SWDF material 36 is placed into a hopper 92 and deposited onto a conveyor belt 94 of conveyor E. As stated previously, the SWDF material has been pre-conditioned by shredding to achieve a desired particle size prior to being placed in hopper 92. In addition, packaged, baled, or other containerized forms of shredded solid waste fuel may be deposited onto conveyor belt 94 by means of a second conveyor feed system at ~~96~~ (not shown).

In The Drawings

Please amend the drawings as shown in Figures 1, 2, 4, and 5 as shown on the attached sheets of drawings.